

# The Boston Medical and Surgical Journal

## TABLE OF CONTENTS

January 1, 1920

ORIGINAL ARTICLES		EDITORIALS	
"FLAT FOOT" AND OTHER STATIC FOOT TROUBLES. By Frederic J. Cotton, M.D., Boston.	1	COORDINATION AND EXPANSION OF FEDERAL HEALTH ACTIVITIES.	18
FREQUENCY OF URINATION. By Frederick D. Davis, M.D., Springfield, Mass.	11	VENEREAL DISEASE CLINICS IN MASSACHUSETTS.	19
		THE FRAMINGHAM HEALTH DEMONSTRATION.	20
		MEDICAL NOTES.	21
MEDICAL PROGRESS		THE MASSACHUSETTS MEDICAL SOCIETY	
REPORT OF RECENT PROGRESS IN OPHTHALMOLOGY. By Edmund W. Clap, M.D., Boston.	12	NEWS FROM THE DISTRICT SOCIETIES.	22
BOOK REVIEWS		OBITUARY	
Handbook of Mental Examination Methods. By Shepherd Ivory Franz, M.D.	17	JOHN HENRY GIFFORD, M.D.	24
Lectures on Sex and Heredity. By F. O. Bower, J. Graham Kerr, and W. E. Agar.	17	CORRESPONDENCE	
Surgical and War Nursing. By A. H. Barkley, M.D.	17	TO THE MEMBERS OF THE MEDICAL PROFESSION. William T. Hopkins, John W. Traut.	
		MISCELLANY	
		NOTICES, RECENT DEATHS, ETC.	

### Original Articles.

#### "FLAT FOOT" AND OTHER STATIC FOOT TROUBLES.\*

By FREDERIC J. COTTON, M.D., BOSTON.

THE foot is the only part of the body that commonly gives out under ordinary conditions, without disease or injury, before the age when degenerative changes are to be expected.

No doubt bad shoes and hard pavements deserve the abuse they get in this regard; also one must remember that the foot is at the bottom of the pile, and is the only part that carries all of the body weight.

Now, a great deal of writing has been perpetrated on foot troubles of static origin, whereas the matter is really simple in statement, if not always simple in treatment.

One may classify these conditions with a good deal of accuracy,—and with but little overlapping of classes.

\*Rewritten after a talk given before the Brookline Medical Society, Oct. 1, 1917.

The list will include:

1. "Flat foot"
  - a. Habitual (reducible) which takes in most of the cases
  - b. Rigid, or spastic
  - c. Bony
2. Short heel-cord with or without flat foot
3. Contracted foot
4. Anterior arch trouble
  - a. "Morton's disease"
  - b. "Fallen" anterior arch
5. Hallux valgus
  - a. Hallux rigidus

and of all these it is the Class 1a that fills the orthopedic offices and keeps the shoemaker busy devising and advertising the perfect shoe and the ideal arch support.

1a. *Flat Foot: Habitual.* Before one can get a working notion of what this sort of "flat foot" means, he must know the mechanism, what one may call the mechanical physiology of the foot. We must understand how the foot works,—normally.

This understanding is very much clouded by all the nonsense talked about arches, whether fallen arches or not. For all purposes that concern us, it is well to forget the arch. There is no such thing as a fallen arch of the foot; there is no arch, anyway, in any real sense. It just looks like an arch,—and

even at that it *does not fall* but *rolls over*, if it gives way.

The motions of the foot that concern us in relation to static troubles occur mainly in a joint that we rarely think of—the joint (or pair of joints) *beneath* the astragalus. In most feet this is the only joint below the ankle with any considerable range of motion, and it is in this almost forgotten joint,—not in the medio-tarsal joint,—that the lateral motions of the foot take place.

The foot is first of all an antero-posterior lever, with a fulcrum at the ankle, with a *short arm*—the os calcis—to which power is applied through the tendo Achillis, and a *long down-thrusting front arm*. For purposes of propulsion the ankle is like a horse's hock, and the ball of man's foot is the hoof that gives the last shove to the spring. Man *stands*, like the bear, all along from toes to heel, and *balances* on the hock, or ankle. As a balancing (not a shoving) member the foot is a base, the leg pivots on this base at the ankle, and the balance is preserved by a pull on the heel-cord behind and on the tendons of the tibialis anticus and the dorsal extensors in front. There is a lateral motion also. This occurs, not, as often taught, at the medio-tarsal joint, but between astragalus and calcis, about an oblique axis pointing down and back (See Fig. 1). This motion occurs as a rolling in and out, with a sweep of motion much greater at the front than in the rear,—a rolling of the foot *under the stationary astragalus*.\*

There is no inward or outward movement of the foot and no circumduction possible, except as these movements are *part of the single movement of pronation and supination* permitted by this subastragalar joint. This is a rocking motion taking place about the great ligaments attached to the bottom of the astragalus near its centre, and hitched to the centre of the os calcis,—between the front and back joints.

With the foot flat on the floor† in *supina-*

\* Stationary when it is the foot that swings; see following footnote.

† Just above, the notion is described academically, of the distal portion on the proximal, of the foot on the astragalus. This is, of course, accurate as to "circumduction" motions of the free foot but in daily use it is the foot that is fixed on the ground in standing or walking,—the parts above that move on the foot as a base.

The "physiological mechanics" of the joint, and of the whole set of motions in pro- and supination, "ab- and adduction," and "circumduction" of the foot, seem never to have been worked out prior to an investigation reported in this journal (Lovett and Cotton, *Boston Medical and Surgical Journal*, Vol. cxxix, July 28, 1898, page 101). The conclusions of this investigation were promptly accepted by Dr. Thomas Dwight and incorporated in the teachings of the Harvard Medical School, and have, so far as I know, never been challenged.

tion, the head of the astragalus (on the front-inner-end of the astragalus) moves outward; what we will call the rear-end (really the *outward-and-rear* position) slides up and inward in the joint on the os calcis. With this motion there is a little play in the mediotalar joint, and the foot proper—all that part below the astragalus—becomes concave on its inner side.

In *pronation* the reverse happens,—the rear of the astragalus slides down and out, the *head swings inward and down*, the medio-tarsal joint makes way for it a bit, and there is both a rolling of the foot down and in, *under the astragalus*, and some *abduction* of the front part of the foot at the medio-tarsal joint.

In standing, this last is the position of "passive weight bearing"—the "slumped" position; the habitual assumption of this position is what we call "flat foot," "weak foot," "pronated foot." (See *b*, Fig. 7.)

What can hardly be over-emphasized is that this condition represents no deformity, but merely a *position of relaxation*. Such a foot has no bony changes, and is perfectly capable of correction.

There is such a thing as a bony deformity in flat-foot, but it implies long continued strain *at the developmental age*, and is not usual.

What we see, what fills the orthopedic offices and excites the shoemakers (and others) to frenzies of false theorizing, is this *habitually pronated foot*.

The difference between the pronated position and the normal balanced position depends *not on ligament support but on muscle action*. Any foot will, and often does, go into pronation in certain movements, as in walking on uneven ground, but it is *not habitually pronated*. It is a question of muscle-balance, of the preservation or restoration of proper muscles properly (and unconsciously) used.

Therefore the problem of preventing this sort of flat-foot, so called, and the problem of the *radical cure* of the great majority of people who came to us for relief, must be on *physiological* lines.

At first hot-soaking, massage, etc., help to do away with the soreness. Then, strapping (Fig. 2), decent shoes, the Thomas sole and heel (Fig. 3), and the use of pads on an insole (Fig. 4), or even of a supporting plate

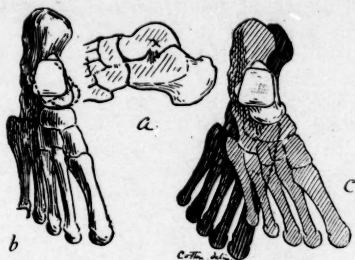


FIG. 1.—(a) Median section of foot, showing the joints and the ligaments between astragalus and os calcis; (b) Normal balance of foot. From this position the astragalus can swing over in further supination to the position sketched in dotted line. This position of the astragalus, however, implies an extreme supination of the whole foot, as shown in the lighter shading of (c). (c) Extreme supination (light); extreme pronation (dark)—with astragalus fixed.



FIG. 2.—Strapping to correct undue pronation.

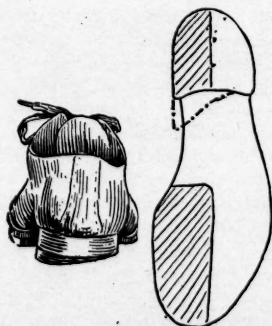


FIG. 3.—Thomas sole and heel to produce or help supination. (The forward extension is a later elaboration but is really worth while if the shoemaker can do it.)

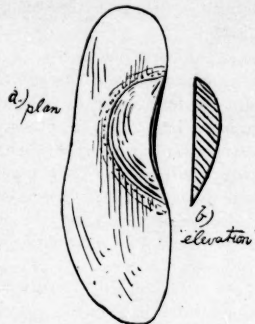


FIG. 4.—Felt pad on insole.



FIG. 5.—The outward rolling exercise. Weight on feet, body steadied by support of chair or table. Roll outward 12-30 times, twice daily.



FIG. 6.—Second exercise—up and out—rise on toes and pull heels in!

under the sole will make the patient more comfortable.

But this is palliation, *not cure*.

*Cure* is by education and exercise only.

Plates are not only not called for as a permanent support but by their pressure make trouble and interfere with the proper use of the foot. The patient who cannot get rid of plates in three months has not, as a rule, had proper treatment,—properly carried out.

Now as to exercises, what muscles are at fault?

Particularly the tibialis posticus, flexor longus hallucis, flexor longus digitorum,—the whole group of muscles, the tendons of which run beneath the internal malleolus. These muscles may not be weak, but they lack tone and are not habitually in use, as they should be.

Besides these, the short flexors of the foot should help in maintaining proper position and action.

There is no point in working out special exercises for *each* muscle,—it is much better to exercise them in their natural group motions,\* and such exercise is more practical, as experience shows.

Of the exercises shown practically efficient, I prefer the following:

First comes the rolling exercise. (Fig. 5.)

Second, plantar reflexion with supination. (Fig. 6.)

Start the patient doing these exercises twenty to thirty times, morning and evening. Emphasize that in the second exercise he pay especial attention to keeping the ball of the foot flat on the floor, as he comes up, and twist the heel inward, and that he try to grasp the floor with his toes.

At the next visit add a *third* exercise, voluntary supination with the whole foot on the floor. (Fig. 7.) This is not so easy to "get the hang of," and requires a little persistence on the surgeon's part in many cases, besides a certain "sweet reasonableness" on the part of the patient.

Next, get the patient to try always, as he walks, to feel his weight on the outer side of the foot, always to use his toes as he walks, and always to toe straight forward. Show

him, on himself, that he necessarily pronates if he toes out, that he cannot pronate if he toes in sharply. If he must stand a good deal, then emphasize the usefulness of toeing-in sharply with the weight-bearing foot—a very sparing and practical trick. (Fig. 8.)

After a few weeks he will himself be ready to do away with relieving supports of all kinds, and will be not relieved, but cured.\*

Some feet one does meet that resist such curative measures. The patient's weight or age, or other infirmity, or his inattention, defeat proper treatment, or even forbid its being instituted.

What of these cases?

In my experience these cases are very apt to be failures under the usual plate treatment, and drift from one office to another, and try out one after another theory of plate cutting,—and some of the plates devised certainly are weird enough so they should accomplish something,—but they seem not to.

Broadly speaking, if a foot is poor enough to call for more than a little support, it will not tolerate the pressure of this support from beneath, however well-fitted the plate.

In these cases it is justifiable to try sole plates, but only to try them. If they do not work, frankly give them up for the rocker plate or the outside-upright.

The rocker-plate is devised not to thrust upward on the sole but to roll the foot outward,—relying on the fact that the outer edge of any foot is lower,—and strikes the plate first in stepping,—and so starts it in a roll outward on the round rear-edge of the plate with a resultant push of the plate outward on the inner side of the foot.

Difficult to get made, not easy to fit, these rocker-plates are not always comfortable, because of friction, but they do the work mechanically, and do it well in many cases.

Surest of all is the outside-upright with ankle-joint and T-strap. (Fig. 9.)

No one likes the idea of so much apparatus, but if the steel is made light, and if the ankle joint is at the proper height, such ap-

\* Many exercises advocated are based on the value of the tibialis anticus as a corrector. This I believe to be wrong. This muscle in normal walking does supinate the foot as it leaves the ground, but does not act in rhythm with the others in the step at all. I believe its cultivation of no account in flat-foot treatment.

† If practicable, it is of great advantage to have supervised active exercises—to the end that the patient may not only be shown how to walk right, but may be hardened into doing the right thing. In the army I had a chance to do this, and the very excellent results achieved with "flat-feet" at Walter Reed General Hospital in Washington, in the summer of 1918, were largely due to Lt. Harry Goldblatt's "flat-wheel squad," which paraded every morning for a mile or two under escort of this excellent officer with a "bucko" sergeant holding the formation. Capt. Rich, further west, and a score of others did like work with results. In civil life one cannot quite do this but the idea is worth keeping in mind. A lot of folks seem to need driving.



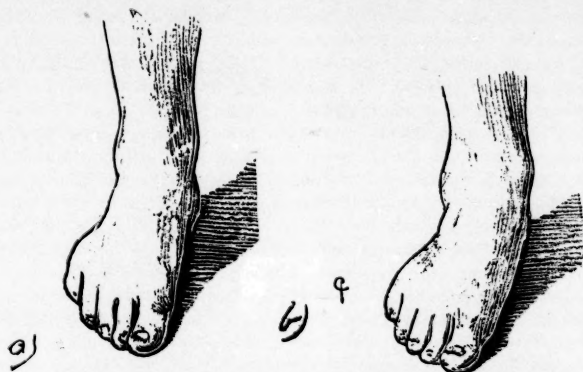


FIG. 7.—(a) The normal balanced foot held in moderate supination. If one can at all convert *b* to *a* much has been gained. The semi-involuntary conversion of *b* to *a* as a result of special training constitutes the only cure of "flat-foot" known to the writer. For those inclined to be of faint heart, let us say that this conversion of voluntary into subconscious control of muscle-action takes place a bit more promptly than one would expect.



FIG. 8.—"Toeing-in," a position much frowned on by our teachers and elders, is really an admirable corrective of pronation—awkward as it looks. One cannot toe-in and also pronate. Try it!



FIG. 9.—Outside support with ankle joint and T-strap to limit pronation.

paratus is hardly to be called cumbersome, and will put on their feet many otherwise helpless people. Later, after relief on this line, you may experiment on these folks with plates and exercises, and may perhaps succeed with some of them. Some cases never get away from the supporting upright, at least for sustained walking and standing.

Class 1*b* is the rigid or spastic flat-foot, held in *fixed pronation* by general muscle-spasm, or by spasm mainly of the peroneal muscles. Such spasm is not correctible by exercises, by plates, or by forcible manipulation of any usual sort.

Tenotomy of muscles will do it, *but is not needed or justifiable, as a rule.*

Unless such spasm quiets promptly, after a few days of *absolute* rest in bed (and heat, massage, etc.,—which do *not* work more often than they do) then we must correct the spasm by stretching under ether, and must hold the correction by a plaster, applied with the foot in forced inversion.

After a week or so in plaster we may treat the case as one treats a tender non-spastic flat-foot.

**Class 1 c. Bony Flat-Foot.** These cases vary from the convex "flat-foot,—the "wheel-foot" ("Rad-fuss") of the German books,—to cases in which there is only moderate though definite bony change, resulting, usually at least, from changes occurring late in childhood.

In the draftees of our last two years there have been many such cases,—and a surprisingly large number of them have been farmers, and not a few mechanics, of good general physique.

Often enough a foot of this type may be perfectly serviceable for ordinary use, though unfit for army "hiking" under a load.

I have known one star sprinter and jumper with this type of foot, and a lot of gymnasts, and not a few high-grade strong-men and weight-lifters.

For the surgeon it is a matter of symptoms,—only.

If such a foot has done its work in the past we can bring it back by the usual methods,—by correction (in plaster if need be), by exercises, by temporary supports, baking, massage, etc., to its *previous* condition.

*Cure* is possible only by operation, and in the obstinate and extreme cases of this type with disabling symptoms the Ogston operation, of cuneiform resection, is the desirable means. This operation does not give back full mobility, but does bring the foot back under the leg where it can do its work.

**Class 2. Short Heel-Cord.** Of late one has heard a lot about short heel-cords, which have served as an excuse for an ingenious and profitable operation of tendon lengthening.

Despite my failure to find any considerable number of cases of this type calling for any cutting operation, there is no question about the frequency of short-heel-cords as a factor in foot troubles.

In fact a very considerable proportion of all our women (men are rather rarely so troubled) have lost their normal range of dorsal flexion,

and can hardly bring the ankle to a right angle.

High heels—habitual high heels—are most often the cause,—by way, probably, of disuse of this motion.

Often no harm results, but, especially if the afflicted lady gets into low heels to play golf or the like, she falls victim to a curious mechanism of foot action.

If, with a short heel cord, one comes down to low heels, then an odd thing happens. In the forward stride one has not motion enough, and instinctively toes out to supplement this motion with the slack obtainable in the medio-tarsal joint,—and so induces "flat-foot" symptoms.

One sees this condition not uncommonly in "probationer" nurses, long habituated to high heels and put suddenly into "ground-gripper" or orthopedic shoes. They "cripple-down" promptly, in many cases, but can be relieved by putting them back into the thoroughly wrong shoes they have previously worn. After they get better, one may tackle the real problem of restoring the foot to normal conditions. Or, if they are happy in high heels, perhaps there is no reason to disturb them.

Newton Shaffer first showed us how to stretch calf-muscles and heel-cords. The late G. G. Davis, of Philadelphia, showed how to do it easily, and the Davis "wrench" should be a part of every surgeon's equipment.

The underlying fact is that the heel-cord—or the muscles of the calf—can easily and painlessly be stretched, without ether, in one or several sittings, as far as one needs to stretch them. When this is done, these cases of short heel-cord nearly all become merely "weak" or "pronated" feet, to be treated *secundum artem*.

Until this stretching is done, no treatment is of much avail for these cases, for they cannot be put into even reasonably sensible shoes: As soon as they come down off the high heel, the tension of the heel-cord forces them to complete each stride by toeing out and rolling the foot into pronation,—since they cannot dorsally flex it.

**Class 3. Contracted Foot.** This deformity is not, in my opinion, static at all, save in the sense that use aggravates the symptoms, but it is often so like the spastic (Class 1 b) in general outward semblance that it must have a word.

Contracted foot, as the term is used here, is a condition of atrophic muscles, and of contractures of muscles, and of fibrous tissue, that leads to loss of power and to structural deformity. The cases all date from childhood and are practically always bi-lateral. They are certainly related to the spastic paraplegias, and, I think, are about always congenital.

None the less they often come to us with a history of trauma or overstrain, and are at least greatly aggravated in symptoms by trauma and often first noticed after such aggravation. I have seen a small group of such cases among soldiers in all of which injury or heavy "hiking" had produced just this picture in feet really typically contracted, which had previously done average service in life without symptoms. Oddly enough, it is usually one foot that gives trouble, though both may be about the same objectively.

A foot of this sort presents an abnormally high arch, a short heel-cord, toes cramped into flexion, but lifted back into dorsal flexion at the metatarso-phalangeal joints, tight-drawn plantar fascia, and, most characteristic of all, prominent bearing surfaces, calloused and usually tender, over the metatarso-phalangeal joints of the first and fifth. The heel is apt to be turned in.

There is markedly small bulk in all the small muscles of the foot, most obvious in the hollow sole.

There is a claw-like look to the whole foot, but this is often not very obvious at first glance.

All tendons are tight but (unless as a result of recent acute irritation) there is no sharp muscle spasm.

These cases may be palliated by rest and strapping support, by pads behind the calluses, etc.

Practical cure may be obtained by tenotomies, and to these may well be added the McKenzie-Forbes operation of transplantation of the extensor proprius hallucis to the far end of the first metatarsal. I have had good results both ways. One case, entirely crippled before operation in 1914, has served through the war in the Navy. When I last saw him, in April, his only complaint was that he couldn't get out.

If persistent tenderness below the first metatarsal phalangeal joint persists, and is not relieved by a proper padding, I have had ad-

mirable results in two cases from excision of the prominent sesamoids through a lateral incision, avoiding the weight-bearing surface.

4. *Anterior Arch Troubles.* "Fallen arch" in common parlance means pronated foot, "falling" of the longitudinal "arch." But, we have not only the long arch but the "anterior arch" which is liable to "fall." It might fall, but there would have to be an arch to fall—and there is none—not even a trace, any more than there is an arch of the palm of the hand.

However, the ball of the foot is so made that if it is squeezed out of shape, or if it bears weight unevenly, there is trouble. One form of trouble is Morton's disease. (4a.)

4a. If you press down on the middle knuckles of the hand and then squeeze, you pinch nerves. Most schoolboys know this.

If you wear a shoe with a concave sole, tight enough to squeeze the foot laterally, you may get Morton's disease, which is merely a squeezing of the nerves between the third and fourth metatarsals brought about in this way. But Morton's disease is unusual, while "metatarsalgia" (anterior arch flattening) (4b) is common.

4b. This common type, easily recognizable by the central callus on the front part of the sole (See Fig. 10) and by the prominent heads of the central metatarsals, easily felt, is a distortion of the foot that leaves, not the whole row, but the second and third\* metatarsal heads to carry the weight. It is a result of bad shoeing, of the wearing of concave soles. Tight shoes as such, save for those concave soles, have nothing to do with metatarsalgia except that in the Morton's type they hold the already displaced metatarsal on the nerve till the shoe is kicked off. In the more ordinary type, in fact, a looser shoe often aggravates the trouble. In such cases there is not the characteristic nerve pain of the Morton's disease type, almost unbearably acute, referred to the area of distribution of the nerve in the toes, but an exquisitely tender central callus and a dull ache of the whole front foot, that may be enough to amount to real total disability so far as real walking goes. The chiropodist pares down the callus and helps, temporarily.

In this type of cases there are no muscles that can be called on to act.

\* Or less usually the third and fourth.

There is no possibility of physiological cure in anterior arch troubles. We must relieve by support.

Cases get *better, not well*, and always require care, in regard to shoes, at least.

There are several ways to go about treatment.

The Thomas or Jones scheme,—a bar across the bottom of the sole just behind the metatarsal heads—flattens the sole and gives a rigid surface, but is clumsy. Morton's cuff (Fig. 10), with a pocket into which is thrust a heavy rounded felt pad, is excellent. Better yet is a similar felt pad held in place with a band of adhesive plaster about an inch wide, encircling the foot. This requires renewal, of course, and cannot be renewed indefinitely without skin irritation. By either method the central metatarsals are shoved up—back into their proper relation—by pressure *behind* the sensitive, calloused skin beneath the heads, and then the bones are held steady by the encircling strap.

Or, merely a pad *usually* suffices—set on an insole—behind the central callus (Fig. 11). Such pads should be higher than one would expect to have tolerated (up to  $\frac{7}{8}$  of an inch) and relatively small, not over  $1\frac{1}{4}$  inches broad,  $1\frac{1}{2}$  inches from front to back.

Certain patients, given a *flat, solid shoe*, rather snug-fitting, need no other treatment. Certain others do better with a decent fit, with a flat sole and simply a strap (no pad) around, just behind the ball of the foot, preventing the spreading apart, the flattening and distortion, the tendency to which persists even if the shoes are seen to.

Anterior-arch plates alone are unnecessary, though a plate supporting the long "arch," with a hump to lift the anterior "arch," may reasonably be used at times if there is associated pronated foot.

5. *Hallus Valgus*. Hallux valgus is, in common parlance, a "bunion." The bunion is a chronic bursitis of what one may call layers\* of bursae over the joint.

The bunion results from shoe pressure due to a prominent joint, said prominent joint being due in turn to previous criminality in shoeing, as a rule.

A "tooth-pick" shoe, or a shoe too short, starts the deviation of the great toe outward.

\* A compound bursa is common instead of the simple one usually assumed to be present. I have seen *three superimposed*. Almost always these bursae (or one of them) communicate with the joint. This is why the "bunion" as such is not operable.

Modern shoes are not so bad: in bunion cases today we are dealing mainly with the results of the felonious shoe trade of the '90's and the first years of this century.

The great toe, once started outward, is constantly pulled outward by the obliquity of the flexor (and extensor) muscles (see Fig. 12.3) and pulls over worse and worse.

As it pulls over, arthritic changes (even in patients otherwise innocent of "rheumatism") occur, and the part of the metatarsal head vacated, so to speak, by the retreating phalanx, grows apace. (See Fig. 12.2.)

Meanwhile the bunion gets worse, despite the chiropodist.

Hallux valgus, once established, is, save for surgical operation, incurable,—the much-vaunted splints are not worth the trouble as to cure. Much alleviation of discomfort from the associated bunions may be secured by using pads exactly *unlike* the usual circular bunion plaster which only pulls outward so as to increase tension on the centre of the circle. Proper pads are horse-shoe shaped, as shown in Figure 13, so placed as to transfer unavoidable shoe-pressure to points capable of sustaining it without pain. Minimizing this pressure by proper straight shoes or by soft shoes of the general model of the old Waukenphast type, or even by slitting or cutting out of the shoes, is of obvious value.

As to surgery of hallux valgus. Many operations have been devised: of these some have been abandoned, some not yet abandoned; some are really worth while. The accompanying diagram may help explain the situation. (Fig. 12.)

*One may do*, first, the ideal operation,—which is undoubtedly that of the late R. F. Weir of New York, but it is a good deal of an operation and is not much done.

*One may do*, second, the usual operation,—remodelling of the joint (Fig. 12.5)—combined with a bursal excision.

Years ago I found it not worth while, in the end, to do this without also doing, first, a division by the knife, or, better and safer, by tension over an osteotome, of the contracted external capsule of the joint; and second, a looping or transplantation of the tendon of the extensor proprius hallucis to a point on the first phalanx of the great toe.

*One may do*, third, the cuneiform osteotomy of the metatarsal head (Fig. 12.4), which does

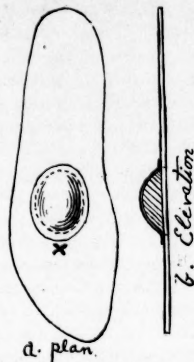
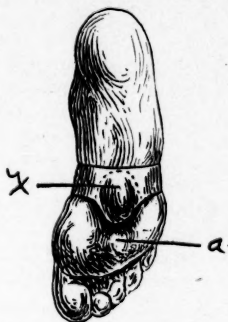


FIG. 10.—"Morton cuff" with pad in the pocket at X. The callus uniformly present in "anterior arch" cases is to be found at a.

FIG. 11.—Pad on insole, for anterior arch trouble. X shows position of central callus, from which pressure is diverted by the pad.

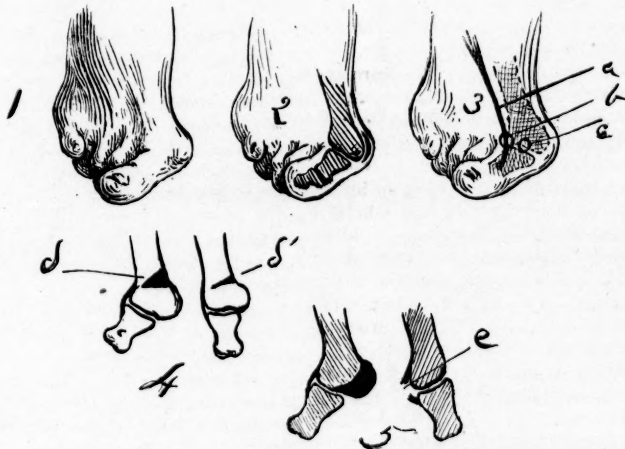


FIG. 12.—(1) Hallux valgus. (2) Hallux valgus: bones! Note hypertrophy of metatarsal head—obliquely. Note, also, the "bunion" bursa. (3) a Ext. proprius. Note outward pull of the displaced tendon; b, c, are the sesamoids, displaced outward, more or less, with the flexor tendon. (4) Cuneiform osteotomy: d the wedge removed; d' correction after removal of the wedge. (5) Plastic operation. Portion in black is resected at e, the external ligament is divided permitting real correction of the deformity.



FIG. 13.—Proper bunion pads of felt.



everything except cure the bunion, which, after all, ceases to be important with the deformity corrected; one may add an excision of the bunion to the osteotomy operation.

One may not do any operation on the bursa (bunion) except in connection with a correction of the deformity.

Unfortunately none of these operations presents an easy job, easy as they look.

In the summer of 1918, the very wise gentleman in charge of the army medical service forbade further operations on hallux valgus in camp hospitals. This, I have reason to believe, was not the result of prejudices, but of proved disasters.

These hallux valgus operations are useful, but are rather difficult, and not to be done except under scrupulous precautions and with greatest care in mechanical as well as septic technic.

The common disaster is sepsis, for thick foot-skin is hard to disinfect; the common misdemeanor is the taking away of bone needed for support, or the doing of an operation so half-hearted that the deformity recurs,—and promptly.

*Class 5 a. Hallux Rigidus.* Hallux rigidus,—loss of the up-and-down motion at the bunion joint, "squaring" of the joints, with or without hallux valgus,—can be corrected only by operation. The symptoms can, however, be relieved, in many cases, by prescribing heavy stiff soles of the police-boot sort, and for many elderly patients, this is all that is called for.

These are the main static troubles and a sketch of the worth while ways of helping them.

This sketch covers only the "static" conditions. There are, of course, other foot troubles aplenty, not falling within the range of this sketch, ranging from Chareot-joints to soft corns, but the classes above covered constitute the great mass of the cases—nearly all that one sees in general or surgical practice.

One may hardly conclude an article on feet without talking about shoes.

The army shoe of today, despite its too long shank and too short toe, for a lot of feet, is still the best that has been done,—better, I think, than the shoes I cannot name without bumping a copyright, better than the shoes which in all our larger towns perpetuate the fame of each local practitioner who has worked over a special last.

The extreme "orthopedic" shoe calls for a position of supination that would suit the palm-climbing Filipino of Dean Worcester's Geographic Magazine pictures, but goes too far for our office cases, and tends to produce painful corns of the fifth metatarsal-phalangeal joint.

Given a shoe with a straight inside line, room for the toes, a firm clasp of heel and instep,—one cannot get anything more for working service for the civilized (not perhaps the ideal) foot.

What about heels?

Heels are a matter of habit. And habits may not always be changed without damage, at least not without consideration and caution.

In the case of women, and even of grown girls, defective dorsal flexion is hardly the exception, and inability to flex dorsally beyond a right angle is not at all unusual.

It is not important whether this implies actual shortening of the heel cord or the calf muscles or not; the fact that is important is that a patient with such feet put into heelless or low-heeled shoes almost inevitably becomes lame with great promptness.

Whether such lameness calls for stretching, as described earlier in this paper, or whether a compromise (as to heels) between efficiency and fashion is the wise practice, must be debated in each case.

High heels are a poor sort of thing to walk on because they shorten the stride. They predispose to ankle sprains because they tip over sideways so easily. They jam the toes down into the shoe and thus help make corns. But that they cause flat-feet I gravely doubt.

One must always "sum up," and I think my summation is:

1. Most foot troubles are physiological,— "static" in origin.
2. In a large share, bad shoes are responsible.
3. In many, bad habits in use of the feet are responsible.
4. In cases of Class 1 a decent shoes and properly supervised exercises, properly carried out, will bring about a cure in a very large percentage—probably a majority—of the cases, certainly in a majority of the younger cases,—below 25 years of age.
5. These are the cases to which plates are too often applied.

6. Plates are still too much used.
7. Plates help, but never cure.
8. "Flat-foot" cases, as we meet them, call for either physiological cure,—palliation by straps, plates, etc., then systematic exercise, or else they do ill under the routine and call for more or less permanent support, or (rather rarely) for radical correction by manipulation or by open operation.
9. Anterior-arch troubles are readily relievable, as a rule,—very often not curable.
10. Hallux valgus (and hallux rigidus) may be palliated effectively, but can be cured only by surgery.

### FREQUENCY OF URINATION.

By FREDERICK D. DAVIS, M.D., SPRINGFIELD, MASS.

The frequent passing of urine is often an annoying symptom requiring attention, and not as often a nervous phenomenon as appears to the busy general practitioner.

Nocturnal frequency, of course, is the most serious, for while the mental faculties are at rest, the real causative factor is getting in its damaging work. This malady is perhaps more frequent in women than in men, due to pressure of the fundus uteri upon the bladder mucosa.

*Causes.* In the female, constipation is often the underlying factor. The common occurrence of women at the time of defecation to pass sheets of toilet paper forward in their endeavor to clean the sphincter, also at the same time catching a few drops of urine from the urethra, is another factor. This is a very bad procedure; because I believe it is liable to start up a colon infection in the bladder, causing a low grade cystitis.

There are several theories on extension of this type of infection up into the ureters, either by the lymphatic system, or by direct extension into the pelvis of the kidney.

Very recently, at a cystoscopic examination, this was shown by a large right pouting ureter,—nature's endeavor to ward off the extending infection. Urine taken from each kidney showed a marked colon growth on culture from the right kidney urine, while the left was practically negative; in this case an old chronic appendix and the possibility of migration of colon bacilli from this source to the right kidney. Many such cases among the young school girls, who lead a sedentary life,

often go undiagnosed. They consult their family physician and oftentimes fail to mention this ailment until it progresses into an extremely annoying condition. He, in turn, prescribes a tonic, without a complete cure.

Tuberculosis of the urinary tract is probably more frequent than is generally believed. Frequency in this condition will begin many months before hematuria, due in all probability to the irritation of the beginning ulceration. Again, the earlier the diagnosis, just so much more chance has the patient of recovery after removal of the focus.

In the male, frequency in a large percentage of cases is due to enlargement of either lobe of the prostate or the median bar. Here the one determining factor is the amount of residual urine left in the bladder after forced urination. It is not necessary to go into the various types of prostatic enlargement—from the large baggy prostate, small nodular, to the carcinomatous type; all of which cause a marked frequency and almost always of the nocturnal variety. The patient is unaware that he does not completely empty his bladder, thus carrying all the time residual urine which, after a certain length of time, decomposes, causing an acute or chronic cystitis.

Strictures of the urethra are oftentimes the cause of frequency with the added inconvenience of dribbling, and the end of penis always remaining wet. The most frequent situation of a stricture is either posterior to the meatus, or in the membranous portion of the posterior urethra. They may be hard and indurated, soft, or thin and fibrous. They are apparently the bugbear of the general practitioner, due to the fact that after a severe stretching with sounds they recur. Behind these the germs of gonococci remain for a long period, oftentimes dormant, and at the least provocation start up an irritation simulating a reinfection of gonorrhea.

I cite one case due to a foreign body in the bladder, causing frequency: Young female, twenty years, stenographer, came for relief of frequency with tenesmus; when on the toilet says there appeared to be a plugging of the passage. The history sounded like a vesical calculus and I suggested cystoscopy. There was no hematuria, extreme constipation, otherwise negative. Cystoscopic examination revealed a foreign body in the bladder situated at the left side of the trigone. The operating

cystoscope was substituted, and forceps passed into the bladder grasped the substance and it was withdrawn longitudinally. Upon examination it was found to be the rubber eraser of a lead pencil. This would have been voided voluntarily had the axis come parallel with the axis of the urethra. After questioning patient, she admitted trying to bring on menstruation.

It is quite singular how few symptoms calculi in the bladder will cause. At present, a case under observation in which I have crushed phosphatic calculi still has one calculus the size of a walnut which does not cause much frequency. It seems almost incredible that the bladder will act as a cushion for it to rest on.

*Treatment.* Colon infection of the kidneys responds remarkably well to the washing out of the pelvis of the kidney with one-half of one per cent. silver nitrate. It seldom requires more than three or four washings before the symptoms are mitigated. In a series of ten cases a percentage of 90 per cent. showed marked improvement and at this date no recurrences.

Treatment of tuberculosis depends wholly upon the stage of the disease; the earlier the focus is found and treated the more chance the patient has of acquiring relief, or cure. It goes without saying that when infection invades both kidneys, the bladder will shortly suffer, and the only recourse is mild, soothing treatment. In searching for germs of T.B., it is always advisable to use the guinea-pig test, as oftentimes in a smear the smegma bacillus will confuse.

Treatment of prostatic obstruction again depends a great deal upon the duration of the ailment. Early prostatic disease can be remedied without the aid of the knife. Prostatitis following gonorrhea responds readily to massage, while the other prostatic enlargements are nearly all benefited by the application of heat, either with the Chetwood tube, or by more recent electrical apparatus. In median bar enlargement I have given much relief by use of fulguration with high frequency spark. Young's incisor works quite good in some cases although the disadvantage lies in the fact that the treatment is carried out without the use of direct vision and thereby danger of hemorrhage and getting a larger portion than expected. Fulguration seems to me the choice of procedure, although it takes several seances before the desired effect is procured.

*Treatment of Strictures.* All sorts of meth-

ods have been devised for treatment of strictures, and today urologists are discarding both internal and external urethrotomies, and resorting to them only in extreme cases. The sound, of course, is the common weapon in the hands of the inexperienced. I say inexperienced for I believe the passage of a sound is an extremely delicate procedure, for many times these tried are of too small a calibre, and liable to cause one to make a false passage. In most cases I use a LeFort filiform attached to a sound, thus avoiding the possibility of making a false passage. Recently I have met with considerable success by using the urethroscope, looking directly at the stricture, then passing a small metal cannula attached to the negative pole of the direct current. By continuous application of ten minutes, using three to five milliamperes, the stricture is seen to disintegrate. It is somewhat more difficult to manipulate posterior strictures in this manner, nevertheless, it can be done with good success.

It still lingers in the minds of many medical men of the extreme pain connected with cystoscopy or urethroscopy, which is erroneous at the present time; for, with a four per cent. solution of novocain instillation into the posterior urethra, it can be made practically a painless procedure. The irritation may be greatly alleviated by a hot sitz-bath directly following the seance.

### Medical Progress.

#### REPORT OF RECENT PROGRESS IN OPHTHALMOLOGY.

BY EDMUND W. CLAP, M.D., BOSTON.

##### CORNEAL SCARS.

HOLMES SPICER treats of the formation of clear spaces in corneal nebulae. The presence of clear lines in corneal scars has been long observed but not carefully described. Most of the changes depend on the presence of blood vessels which occur under the following types. (1) arborescent and superficial, (2) terminal loops in marginal inflammations and trachoma, (3) brush form of deep interstitial, (4) umbel form occurring in local inflammation of deep layers of cornea. Vessels keep to their own level, not anastomosing with those of a different layer. Geometrical clear lines occur in the midst of nebulae,

the lines are straight or run into large smooth curves, sometimes parallel, sometimes diverging or converging or radiating from a center. Often they are sharp and straight as if ruled. These lines are often seen only against a dilated pupil. The explanation that they are lines of clearance or disappearance of nebulae due to development of lymph tracts is not acceptable. The probable explanation is as follows: "At a certain depth within the layers of the cornea a tuft of brush vessels makes its way; at the end of the attack the vessels shrink and lose their blood but remain as potential channels. These channels become greatly flattened from compression in the layers of the cornea, during and after subsidence of inflammation, and owing to this they have a much greater width than when they contained blood." "The contractile process which follows all attacks of inflammation produces a stretching along the course of the newly formed vessels confined to the coats of the vessel and its immediate neighborhood. The result of the stretching is to straighten the course of the vessel, to remove inequalities and deviations and to make it the shortest distance between two points." Vessels running through a healthy cornea after a time cause an opacity by interfering with the lymph circulation. This secondary opacification makes the old vascular channels visible and this is more likely to occur at the center of the cornea than at the periphery. The condition most likely to result in these lines, is acute vascular interstitial keratitis running a rapid course and leaving little permanent change in the endothelium. Much deep change will mask the lines. The second type the author calls the mushroom cap. It is like a section through the top of a young mushroom showing stalk and crescent shaped cap and gills on the concave edge. The stalk is of a delicate blue gray, often with vestiges of vessels in it. Between head and stalk is an interval of clear cornea. The head has no vessels or remains of them and is a dirty white or buff. It is thin and apparently confined to one layer of the cornea and deeper than the stalk. Often a complication of two or more such systems may be made out. These mushroom heads appear some time after an ulcer has come to an end. A form is seen after attacks of scleritis. Successive attacks may leave a secondary opaque crescent in the cornea

which may interlace or form a wavy band like an irregular areus senilis. Dermoid tumors or naevi at the edge of the cornea may leave similar opacities. Destruction of tissue with ingrowth of blood vessels is a necessary preliminary to all these formations, the contraction which follows interferes with nutrition or interrupts the flow of the lymph through the cornea leading to stagnation, concentration and deposit of salts.

#### ARTERIO-SCLEROSIS IN CONJUNCTIVAL VESSELS.

Dennis has studied the conjunctival circulation with the Zeiss corneal microscope and special focal illumination. We quote his conclusions; that the normal picture is as follows: the wall is transparent and the lumen regular and the blood corpuscles clearly seen. Their flow goes forward promptly and without clogging or stagnation. The rate of flow is not the same in all vessels and all of the fine capillaries are not full at the same time. One may flash out into view and then disappear, i.e., the corpuscles fill the vessel, move on, and an interval passes before the vessel is again filled with corpuscles so as to be seen. The vessels themselves are not very tortuous. In beginning capillary fibrosis the corpuscles clog the lumen, forming a mass as in a log jam, holding back the blood stream; suddenly the flow goes on again. Or a bead formation happens in the lumen, remaining stationary for several seconds; occasionally the pause is 14 seconds. In advanced cases the fine vessels remain nearly empty or some may be occluded. The lumen may be deformed with alternate strictures and dilatations like links of sausages, these being minute aneurysms. One eye may show such a condition while the other eye has a nearly normal circulation. The color of the vessels in advanced cases is lighter red than normal or if the walls are thicker the color may be rusty brown and the sclera appear very white. The author thinks that in younger subjects, through treatment, even aneurysmal changes may come back to normal. Luedde noticed even reverse flow for an instant in the diseased vessels and the author has seen this, too. Serial sections show increase in connective tissue. Changes in conjunctival vessels are found when the retinal vessels show no apparent changes. The author thinks the scleral conjunctiva the best place to study and that the internist should examine this



region in cases of suspected vascular degeneration.

#### TREATMENT OF CATARACT.

A. S. and L. D. Green of San Francisco have tried out the non-operative treatment of senile cataract of Col. H. Smith of Amritsar. In 80% of their cases the opacification has been checked or the vision improved. These authors think that when vision has fallen to 50% of normal or below operation should be done. Before the vision has fallen to this point the non-operative treatment may be tried. The earlier the treatment is begun the better. Operation later is not interfered with. The one objection is the very considerable pain. Simple senile cataract with diffuse or radial opacities is most favorable for this method. Only the finest opacities seem to disappear. The patient should be in bed and the eye thoroughly anaesthetized with 4% cocaine. Then 20 mm. of 1-4000 cyanide of mercury solution and 2 mm. of 4% cocaine are drawn into a sterilized glass syringe. The needle is inserted under the conjunctiva just below the insertion of the external rectus muscle one cm. from the limbus in an area free from blood vessels and the solution slowly injected. Hot compresses are applied at once and maintained as long as the patient has pain. Morphine may be necessary. A week later the patient may use 1% solution of iodide of potash in an eye cup for five minutes at a time every morning and every other night. On the alternate nights 2% dionin is used and the strength increased 2% a month up to 8%. The injection is given but once. The conjunctiva may be so swollen as to protrude between the lids for a few days. The redness persists for three or four weeks. In 72 cases 18 remained stationary, 12 progressed, and 42 improved.

#### INTRANASAL DRAINAGE OF LACRYMAL SAC.

Fraser and Paterson of Edinburgh report fifty cases of intranasal drainage of the lacrymal sac. Of the patients 43 were female and in four the condition was bilateral. Average duration of trouble was three years. Most of the patients had dilatation, and probing and washing of the sac has been done without permanent relief. The nose was normal in 27 cases and in the others the nasal condition probably had nothing to do with bringing on the tear sac trouble. All had dilated tear sac and ab-

scesses were present in seven. The operation was similar to West's and consisted in removing the mucous membrane over the inner surface of the frontal process of the superior maxilla and chiselling through the bone to uncover the lacrymal sac, which is dilated and usually bulges in towards the nose. A probe passed into the sac from the canaliculus will keep the sac in the opening, where a piece of it is removed by a forceps punch or else drawn down by forceps and cut off with a bistoury. The operation required fifteen minutes to half an hour. Average stay in the hospital was four days. Of 24 patients seen afterwards 19 were completely cured, i.e., no watering of eye, no discharge of muco-purulent matter on pressing the sac and the intranasal opening was free. Two patients had slight watering of the eye and in three cases there was closure of the nose opening and discharge of muco-pus from the sac. Twenty-four patients who reported by letter showed 19 completely cured. The total record is 80% cured, 10% improved, 10% failures.

#### CONGENITAL CHOROIDEREMIA.

Connor reports a case of this rare condition in a soldier who complained of night blindness. The vision in daylight was found to be 20/20 in each eye. He had always had trouble going about after dark but was able to do clerical work. Parents not related, no family or personal history of eye disease. Pupils equal, irides brown. The ophthalmoscope showed cornea, lens and vitreous clear but the fundus glistening white with retinal vessels normal in size and distribution. In the macular region was a nearly normally reddish yellow area about twice the size of the disc, the macula showing as a slightly darker spot near the center of this patch. Elsewhere the sclerotic was exposed to view. Scattered over the fundus were a few pigment spots and a few small ciliary vessels. Both eyes presented nearly the same picture, except that the left macula was less regular in outline than the right. The fields of vision are markedly contracted as are the color fields. Nettleship in 1908 collected the cases in a paper on retinitis pigmentosa, though he regarded it as absence of the choroid,—choroideremia. Jackson says Mauthner reported the first case in 1872 and two years later Koenig reported two cases and three others have been described. The patients were



all males and in all cases but one night blindness was mentioned.

#### EYE LESIONS OF INFLUENZA

Jackson reports on ocular lesions of influenza. The influenza bacillus resembles the Koch-Weeks but produces a different type of conjunctivitis. It produces the other lesions of influenza and forms a toxin having an affinity for the nervous system. As far as the eye is concerned this manifests itself in spasm or paralysis of accommodation, pareses, or paralysis of the extra ocular muscles, photophobia, transient amblyopia, optic neuritis, optic atrophy, neuralgic pain apparently not caused by local lesions and persistent asthenopia lasting months or years. The conjunctivitis caused by influenza occurs mostly in children under one year; it may be like a gonococcus infection or pseudomembranous in character but the majority of the cases are mild and without corneal involvement. Swelling of the upper lid without conjunctivitis may occur. Herpetic or dendritic ulcers of the cornea appear of neuropathic origin or corneal inflammation associated with uveitis. These conditions may arise after the influenza has run its course. Panophthalmitis of violent type may occur or a low grade chronic inflammation that proceeds to shrinking of the eye-ball without any acute symptoms. The ocular disease may be metastatic. Uveal infection by way of sinus or from focal infection may arise. Cellulitis or abscess of orbit may be a primary manifestation of the disease or occur later, and in connection with sinus disease. Toxic amblyopia and retrobulbar neuritis have been reported. A few cases of retinal disease have been seen. Glaucoma is not very rare. Senile cataract may be accelerated by the influenza.

#### OPHTHALMOSCOPY BY RED FREE LIGHT.

Von Der Heydt describes some ophthalmoscopic examinations made with Vogt's red free light. By this the yellow color of the macula can be seen. The retinal fibers are much more evident. In post-neuritic atrophy as well as in primary and glaucomatous atrophy and in that complicating retinitis pigmentosa and fracture of the base of the skull there is found a white marble-like mottling of the surface of the retina. One case showed a thin white line on each side of the vessels which could not be

seen with the usual light. In retrobulbar neuritis (eight cases) there was found absence of striation in the retinal fibers and a substitution thereof of the marbleized zone in the papillomacular bundle. Vogt describes honeycomb changes in the macula in retinitis pigmentosa and also after injury. Some such condition as this is present in cystic degeneration of the macula and may precede "hole in the macula." Delicate opacities in the vitreous and deposits on the lens are better seen by the red free light.

#### FIELDS IN GLAUCOMA.

Van der Hoeve (reviewed in *British Journal of Ophthalmology*) insists on the importance of searching for scotomata near the blind spot in glaucoma. In Bjerrum's method a scotoma is projected thirty-six times its real size instead of only six. The characteristic feature is a scotoma starting from the blind spot and semi-circling the fixation point and ending abruptly at the horizontal meridian. This scotoma may be present in every case of chronic glaucoma, in fact Priestly Smith states that if it were absent glaucoma could be almost certainly excluded. This scotoma is due to a defect in a bundle of nerve fibers which ends in the horizontal raphe of the retina. If the nerve bundle defect reaches to the periphery of the retina a sectional defect appears and the scotoma may reach to the periphery of the field or it may meet a general contraction of the field. Some of the authors' cases show that the scotoma may extend towards the fixation point and threaten the macula. He feels that in any case where the scotoma is up to ten degrees of the fixation point an iridectomy is contraindicated, as it may cause loss of vision and that a sclerectomy, either LaGrange or Elliot, should be preferred. From the cases reported Bjerrum's scotoma may begin as a relative defect for white, and blind islands gradually appear and finally the whole area becomes blind. Scotomata may appear not directly joining the blind spot at first. Scotomata, especially recent ones, may disappear after operation.

#### ANAPHYLACTIC CONJUNCTIVITIS.

Conlon suggests that some of the types of mild but stubborn conjunctivitis that so frequently baffle us and cause our patient to go from one oculist to another without relief may

be due to the protein of common foods. Cases that occur year after year at about the same season suggest some recurring cause. One patient that Conlon saw had had all the usual varieties of treatment without shortening the attacks and external causes of irritation had been investigated. In one patient it has proved during two years that either tomatoes or strawberries would cause the attacks. He never had an attack unless he had eaten one of these foods and later an attack was found to be due to tomato catsup eaten on beans. The protein skin test used by Walker was employed in these cases. Eggs were found to be a very definite cause in one case where the patient had been in a state of constant discomfort for two years. Another case had a yearly attack clearly traced to eating flounders caught on an annual vacation.

#### CONCUSSION AND CONTUSION INJURIES.

De Schweinitz discusses injuries to the eye as seen in the war. The fundus lesions are caused either directly by blow or pressure on the eye ball or indirectly by transmission of concussion or shock. The first are lesions by contact, the second are lesions by concussion as violent displacement of air by explosion of a shell or transmission of concussion or shock through the bony facial structures. Externally there may be no manifestations or only edema or ecchymosis of lid. In eyes externally clear vitreous hemorrhages have been found. In commotio retinae vision may be completely lost for several days followed by a return, though a permanent reduction follows severe types. Lister says a lesion above or below the horizontal plane was found to cause a defect in the field out of all proportion to the local disturbance. Reduction of tension is common and may not always mean a perforating wound of the sclera. In these war injuries besides the retinal signs of commotio retinae there are more numerous hemorrhages and the yellow tint of retinal haze endures longer though it may be more circumscribed. Wrinkling of the retinal layer has been observed. Lacerations of chorioid and retina and their vessels with hemorrhage and exudate are common especially at the posterior pole of the eye and near the papilla. Transudation and hemorrhage cause separation of chorioid and of retina. Secondary to these lesions come atrophy of chorioid and retina in spots and proliferating retinitis. All manner of opacities in the vitreous occur.

The retina is pinned down by opaque plastic material. Holes at the macula are commonly observed. Extensive disorganization of the interior of the eye without rupture may occur. Injury to the optic nerve in the canal and cuts across the nerve usually end in atrophy as does hematoma of the optic nerve sheath. Avulsion of the optic nerve is not infrequent. The difference between concussion changes of fundus in military practice as compared with civil depends on the fact that in warfare the object causing the concussion or passing through the orbit moves with great rapidity.

#### COLORING RINGS ABOUT LIGHTS.

Colored rings or haloes about artificial lights is a symptom of glaucoma and is also observed in normal eyes and the best description of the varieties of these haloes was by Drualt in 1899 at the Congress of Utrecht. This year Sheard has an instructive account and explanation of these appearances. Certain types can probably be seen by every normal individual who looks for them. The size of the pupil has little influence on these rings. A small bright source of light viewed at any convenient distance will show surrounding the whole of the luminous source a general luminous glow with striae in various directions from the central light. This may be called the ciliary corona. Surrounding this is a ring presenting colors from blue to red from the center to the periphery. These phenomena seem to be universal. Under some conditions a second ring, fainter than the first and closely bounding it with the colors in similar order, may be seen. A very bright light and a large pupil favor the finding of this latter ring. The author discusses diffraction by circular apertures and by opaque discs at length, and mathematically concludes that the apertures or particles giving rise to the first ring have an average diameter of 0.0018 cm., and those producing the second ring an average diameter of 0.00083 cm. Schiotz found the epithelial cells of the cornea varying from 25  $\mu$ . to 40  $\mu$ . Drualt made similar estimations but thought that the diffraction was in Descemet's membrane. Drualt attributes the second ring to the lens fibers but Sheard advances evidence to show that this cannot be so and that the second ring is due to diffraction by particles smaller than those producing the first ring, perhaps the inner layers of the anterior epithelial portion of the cornea. The ciliary

cornea is without doubt due to the lens fibers and the striae to the lens star.

#### CORNEAL THERMO-THERAPY.

Weekers details his method of sterilizing corneal ulcers by heat. His view is that the microbes can have their virulence destroyed by heat not great enough to kill them outright and also not to injure the healthy tissue of the cornea. The author used a galvano cautery which can be kept at any degree of incandescence desired. By holding the cautery near a thermometer bulb a good idea may be obtained of the temperature at a short distance from the point, and in practice the glowing point is moved as near the surface of the corneal ulcer as possible without touching it. The progressive margin of the ulcer is especially treated, but no more than one minute at a time is necessary. The cornea should be kept moist, not allowed to dry. Such an application of heat is repeated two or three times at one sitting and a second sitting is not usually necessary for the ulcer usually does not progress. After chauffage the patient has no pain but is relieved, very different from after cauterization, and damage to the cornea is kept at a minimum. Shahan has designed an instrument which he calls a thermophore in which a metal tip can be kept at any desired temperature and held against the corneal surface to be treated for the requisite time. This enables us to be more exact and these methods promise much when we have learned by experience just how much heat is needed and how long to apply it.

#### Book Reviews.

*Handbook of Mental Examination Methods.* By SHEPHERD IVORY FRANZ, Ph.D., M.D., LL.D., Scientific Director and Psychologist, St. Elizabeth's (Government) Hospital for the Insane, etc. Second Edition, Revised and Enlarged, pp. 193. New York: The Macmillan Co. 1919.

This book is intended "to place in the hands of psychiatrists, neurologists, and students, methods of examination which have been successfully used in psychological practice to the end that the mental examination of patients may be conducted in a more systematic and thorough manner." Apart from a few minor alterations and additions this edition remains practically the same as the first with the exception of the addition of a needed chapter on

mental testing in which Woodworth's method of testing emotional instability is given at length. The more complex psychological methods of mental examination are wisely omitted, only the practical tests being described. Since its first appearance in 1912 it has amply fulfilled its promise in becoming a leading authority on the subject within the field for which it was designed.

*Lectures on Sex and Heredity.* By F. O. BOWER, J. GRAHAM KERR, and W. E. AGAR. London: Macmillan and Company. 1919.

These lectures, delivered by the authors at Glasgow in 1917 and 1918, aim to state in simple terms the leading facts relative to sex in plants and animals, with suggestions on the use and effect of sexual propagation. The evolutionary aspect of this subject in plants and in animals is taken in the first four chapters; the last two are devoted to questions of heredity. In further lectures of this series, it is intended to deal with the distribution of inherited characteristics in sexually produced offspring. The chief topics considered in the present volume are the origin of sex in plants, the effect of a fixed position on the sexuality of plants, the reproductive process in animals and the manifestations of this process as adaptations to life upon land, and the fundamental Mendelian phenomena of heredity. The book should be of value not only to the medical profession but to the intelligent laity desiring to acquire a rational understanding of the biology of sex and its bearing on evolution.

*Surgical and War Nursing.* By A. H. BARKLEY, M.D. (Hon.) M.C., F.A.C.S. St. Louis: C. V. Mosby Company. 1918.

Today, surely more than ever before in the history of the world, has the appeal for nursing services been most urgent and today the world is keenly alive to the fact that surgery as it has been carried on in Europe would have been a most laborious task were there not skilful, willing hands to attend to pre-operative arrangements and after care. In this little volume a very successful attempt has been made by the author to outline such phases of the subject of nursing as would be of practical value in the average surgical case. There is much that a nurse must know which she is not always called upon to practice and thus the purpose of this book has been to take an intermediate position between a reference book and a text book. It contains a great many illustrations and it should prove a helpful book not only to the professional nurse, but to those outside the profession, who wish to render intelligent service in the home as assistants to the doctor or to the trained nurse.

## THE BOSTON Medical and Surgical Journal

Established in 1818

An independently owned Journal of Medicine and Surgery published weekly under the direction of the Editors and an Advisory Committee, by the BOSTON MEDICAL AND SURGICAL JOURNAL SOCIETY, INC.

THURSDAY, JANUARY 1, 1920

### EDITORS

ROBERT M. GREEN, M.D., *Editor-in-Chief*  
GEORGE G. SMITH, M.D., *Assistant Editor*  
WALTER L. BURGAGE, M.D., *For the Massachusetts Medical Society*  
COMMITTEE OF CONSULTING EDITORS

WALTER B. CANNON, M.D.  
HARVEY CUSHING, M.D.  
DAVID L. EDWARDS, M.D.  
REID HUNT, M.D.  
ROGER I. LEE, M.D.  
ROBERT B. OSGOOD, M.D.  
MILTON J. ROSENAU, M.D.  
EDWARD C. STREETER, M.D.

### ADVISORY COMMITTEE

EDWARD C. STREETER, M.D., *Boston, Chairman*  
WALTER P. BOWERS, M.D., *Clinton*  
HOMER GAGE, M.D., *Worcester*  
JOEL E. GOLDFRUIT, M.D., *Boston*  
LYMAN A. JONES, M.D., *Swampscott*  
ROBERT B. OSGOOD, M.D., *Boston*  
HUGH WILLIAMS, M.D., *Boston*  
ALFRED WORCESTER, M.D., *Waltham*

SUBSCRIPTION TERMS: \$5.00 per year, in advance, postage paid for the United States, \$6.50 per year for all foreign countries belonging to the Postal Union.  
An editor will be in the editorial office daily, except Sunday, from twelve to one p.m.

Papers for publication, and all other communications for the Editorial Department, should be addressed to the Editor, 126 Massachusetts Ave., Boston. Notices and other material for the editorial pages must be received not later than noon on the Saturday preceding the date of publication. Orders for reprints must be returned in writing to the printer with the galley proof of papers. The Journal will furnish free to the author, upon his written request, one hundred eight-page reprints without cover, or the equivalent in pages in the case of articles of greater length.

The Journal does not hold itself responsible for any opinions or sentiments advanced by any contributor in any article published in its columns.

All letters containing business communications, or referring to the publication, subscription, or advertising department of the Journal, should be addressed to

BOSTON MEDICAL AND SURGICAL JOURNAL  
126 Massachusetts Ave., Corner Boylston St., Boston, Massachusetts.

## COORDINATION AND EXPANSION OF FEDERAL HEALTH ACTIVITIES.

In the control of diseases, coördination of purpose and unity of action are essential factors to success. At the present time, the health agencies of the United States are scattered among a number of executive departments, without a general central control necessary for concerted action. It has been suggested by Dr. B. S. Warren, Assistant Surgeon General, in an article published in a recent *Public Health Report*, that all these activities should be coördinated under one administrative head, with a cabinet officer in charge of the department of health, which should include all bureaus or parts of bureaus and divisions now engaged in such activities.

It may be of interest to review briefly the historical development of federal health activi-

ties. Practically all of the Federal health functions were exercised by the Marine Hospital Service until 1879, when a National Board of Health was created to continue in force for four years. In 1882 Congress failed to appropriate money for the maintenance of this organization and the Marine Hospital Service again assumed charge of the Federal health functions. In 1882, the epidemic fund was first authorized and laws were passed to extend the health functions of the Marine Hospital Service. In 1901, the name "Marine Hospital Service" was changed to the "United States Public Health and Marine Hospital Service," and in 1912 it was again changed to the "United States Public Health Service," with its investigative power increased. It is evident that the Public Health Service was intended to be the principal Federal health agency. For the performance of certain health functions, however, there have been authorized other departments and bureaus, including the Bureau of Chemistry, the Department of Agriculture, the Children's Bureau and Bureau of Labor Statistics, the Department of Labor, Bureau of Census, Division of Vital Statistics, Department of the Interior, the Interdepartmental Social Hygiene Board, and others. This division of health agencies has been criticized, and various suggestions have been made for improving the present system.

The Public Health Service has the authority to investigate human disease and control infectious and contagious diseases. In the conduct of this work Congress has appropriated \$3,338,470 for the fiscal year ending June 30, 1920, to the Public Health Service. Of this amount \$3,000,000 is to be used for public health work. As the performance of functions of the various executive departments authorized by Congress are also within the province of the Public Health Service, Dr. Warren has pointed out that there is an overlapping of functions, a confusion of effort, and a duplication of work; if the bureaus were to be provided with adequate funds, there might result very probably, jealous competition, duplication of work and waste of Government funds.

As public health is not a problem of separate age, racial, or occupation groups, but a problem intimately related in all its parts, it would be well to consider the possible advantage which might result from the coördination



of those several bureaus under one administrative head. If this is to be done, it has been suggested that it would be desirable to create a department of health with a cabinet officer in charge, and transfer to this department all bureaus and divisions of the Government now engaged in such activities. The practicability of this change at the present time is a serious question. Dr. Warren believes that it would be possible to adjust the functions of the single bureaus to the Department of Health in such a way that there would be no loss of prestige to them. The Public Health Service would constitute the main foundation of such a department; its mobile corps of medical and sanitary personnel could be expanded to include in the commissioned corps, with the grades commensurate with their work, all of the scientists and specialists from the other departments acting as a whole under the supervision of the surgeon general and performing all the medical and sanitary duties for all the bureaus and divisions of the department. The same tenure of office, remuneration, commutation, and allowances should be given to members of the mobile corps as to the present commissioned medical officers of the Public Health Service. Under the general supervision of the secretary and assistant secretary of the organization, there would be an executive office in charge of the surgeon general and including three divisions: (1) Personnel, (2) States' Relations, and (3) Scientific Research, with the following twelve bureaus under the general supervision of the executive officer: Mental Hygiene, Child and School Hygiene, Rural Hygiene, Industrial Hygiene, Foods and Drugs, Public Health Information, Sanitary Engineering, Venereal Disease, Tuberculosis, Quarantine and Immigration, Hospital and Relief, and Vital Statistics, and Epidemiology. The secretary and assistant secretary should be appointed by the president by and with the advice and consent of the Senate; the surgeon general, deputy surgeons general, and assistant surgeons general should be appointed from the mobile corps for a limited term of office. Officers, on completion of their duty in charge of the executive office, should be returned to the mobile corps with suitable grades. Dr. Warren is of the opinion that this plan of organization of the departmental administration and the provision for a mobile corps will make possible more complete coördination of the Federal health activities

than would be possible by another suggested plan to organize the department in independent bureaus and demobilize the present medical and sanitary corps of the Public Health Service.

Inasmuch as the greatest limitations to the Public Health Service are money and men, the advantages to be gained by combining resources should be considered seriously. By supporting existing agencies and bringing about their most efficient administration, with proper coördination between Federal, State, and local health activities, with adequate expansion of the interstate operation of the Public Health Service, and with the Federal aid extension plan, is it not possible that there might result a unity of action which would make possible greater progress in the prevention and control of preventable diseases than has been attained under the existing conditions?

#### VENEREAL DISEASE CLINICS IN MASSACHUSETTS.

A RECENT communication from the Commissioner of Health of Massachusetts has emphasized the importance of reporting cases of venereal disease to the State Department of Health and has outlined the treatment available for persons suffering from these diseases. The fact that since February 1, 1918, when regulations requiring the reporting of venereal diseases were put into effect, over nineteen thousand cases were reported by the first of August, 1919, by not over one-fourth of the physicians of the State shows that there are still a large number of cases who are endangering public health by lack of treatment.

For the treatment of venereal diseases, sixteen State-approved clinics have been established in convenient centers of the State. The purpose of these clinics is (1) to furnish special treatment for those patients having venereal infection, especially in the infectious stages of the disease; (2) to provide consultation service for those physicians who might wish such assistance; to distribute arsphenamine (Salvarsan or 606) free to those physicians who possess necessary practical experience in its administration; and (4) to furnish physicians with supplies of arsphenamine after the chief of the clinic has been satisfied as to their professional qualifications and familiarity with the special technique for the administration of the drug.



The question of need for arsphenamine is determined as far as possible by confirmatory Wassermann tests: in non-infectious stages, Wassermann positive tests are obtained before the arsphenamine is used. No fee for arsphenamine is charged under any circumstances. The privilege of any hospital, institution, or practitioner to receive arsphenamine may be discontinued if any charge is made for the remedy itself, for failure to submit reports of treatment or Wassermann tests, or otherwise abusing the privilege of receiving arsphenamine. This medical service is available in all parts of the State, and any physician may receive the assistance he desires at the clinic for the area within which he resides.

Between February 1, 1918, and August 1, 1919, there have been reported a total number of 19,218 cases of venereal disease, of which 13,444 were gonorrhea and 5,774 syphilis. During the month of July, 1919, 1,033 cases of gonorrhea and 330 of syphilis, making a total of 1,363 cases were reported. Of this number twenty per cent. were reclaimed to treatment, four per cent. no longer require treatment, it is impossible to locate twenty-one per cent., follow-up work is being conducted in the case of fifty-three per cent., and two per cent. have moved out of Massachusetts.

More complete coöperation from physicians is imperative to insure success in the control of venereal diseases. The State Department of Health is loath to believe that the remaining three-fourths of physicians who have not reported these diseases fail to do so from criminal negligence, but is of the opinion that indifference is responsible for a great part of the non-reporting. It is strongly urged that to avoid misunderstanding and to assist the State Department of Health so far as possible, due precaution be taken by physicians in reporting all cases of venereal disease coming to their attention.

#### THE FRAMINGHAM HEALTH DEMONSTRATION.

In 1916, the sum of one hundred thousand dollars was placed at the disposal of the National Association for the Study and Prevention of Tuberculosis by the Metropolitan Life Insurance Company for the purpose of conducting over a three-year period a community

experiment in the control of tuberculosis at Framingham, Massachusetts. In order to determine the results of this demonstration and the practicability of continuing it, a committee was formed to estimate the value of the work already done. An unprejudiced and scientific analysis of the work has been made by the Appraisal Committee. The achievement of the Demonstration has been commended highly by the committee.

The Framingham Health Demonstration has given us our first opportunity to estimate the actual amount of tuberculosis in a typical American community. It has pointed out that the most effective practical way of controlling tuberculosis lies in the development of machinery for its early detection and for the hygienic care of persons affected or threatened with the disease. Medical examination showed that one per cent. of the persons examined were suffering from active tuberculosis, while there were more than this number of arrested cases. Statistics indicate a rate of nine or ten active cases a year to one reported death.

One of the most important of all the practical contributions made by the Demonstration has been to work out a medical consultation service, which has been adopted in sections of Illinois, New York, Ohio, Oklahoma, Vermont and Wisconsin. The fact that now there are nearly two hundred cases under observation, whereas there were only twenty-seven at the beginning of the Demonstration, indicates the success of this organized campaign for the discovery of tuberculosis. During the first year, forty-two per cent. of the new reported cases were of an advanced type; in the second year, only sixteen per cent. were advanced, and in the first five months of 1919 twenty-three per cent. The tuberculosis death rate has fallen from ninety-three per one hundred thousand in 1917 to seventy-nine in 1918. These figures indicate the importance of the Demonstration's work. As it would be difficult to determine the full value of this experiment in a three-year period, a continuation of the Demonstration has been recommended by the Committee on Appraisal and an additional sum has been contributed by the Metropolitan Life Insurance Company for carrying on the work during the year 1920. It is hoped that further investigation will yield information about the theoretic factors which contribute to the development

of tuberculosis. Special attention is to be paid to the intensive study of environmental conditions, in the home, the factory, and the community, with a view to discovering more accurate knowledge about the effect of various conditions upon the disease. The results already accomplished by the Framingham Demonstration give promise of further research of considerable value.

#### MEDICAL NOTES.

**UNUSUALLY LOW AUTUMN MORTALITY. A FAVORABLE SEQUEL TO THE INFLUENZA EPIDEMIC.**—Health conditions this fall have been the most favorable in years throughout the country. The records of the large states and cities and those of the life insurance companies, show no signs of a recurrence of the recent influenza epidemic. The mortality from other diseases is at an unusually low point. This may be due to the fact that the larger number of those susceptible were more or less immunized by contracting the disease last fall. There is no doubt also that the epidemic carried off prematurely a large number of persons who had other diseases, usually chronic, who would probably have died this year. The general average of the public health is, therefore, better than it has been for a long time. If there is to be any serious aftermath of the influenza epidemic of 1918 it will have to appear later, as it has not been shown thus far.

The extremely favorable health conditions of the present season are shown by the industrial mortality records of the Metropolitan Life Insurance Company. The low death rates among its policy holders for the months of July, August, and September were followed by favorable developments during October and November. Instead of the marked increase that is expected in these months, as compared with the summer months, the mortality in October was only very slightly in excess of that for September, and was much lower than the normal. Instead of the increase which is usually shown for November, the rate actually declined over eight per cent. from the figures for October.

The low mortality in November is due largely to a sixteen per cent. decrease in the death rate for tuberculosis. On the other hand, diseases of the respiratory system—more especially the

pneumonias—increased considerably in November. Long experience has shown that this is virtually inevitable at this time of the year.

The year 1919, in spite of its bad beginning, will probably close as one of the best in the history of the country from the health standpoint.

**MARQUETTE SCHOOL OF MEDICINE.**—The following appointments have been made on the faculty of the Marquette School of Medicine: Fred T. Rogers, Ph.D., formerly assistant professor in the department of physiology, University of Chicago, professor and director of the department of physiology; Otto F. Kampneyer, Ph.D., formerly connected with the University of Illinois, associate professor of anatomy; Albert J. Bruecken, M.D., formerly pathologist and bacteriologist in Mercy Hospital, Pittsburgh, and demonstrator of pathology, at the University of Pittsburgh, junior professor of bacteriology; S. C. Henn, Jr., M.S., formerly fellow in the department of physiology, University of Chicago, instructor of physiology, and John Tillemann, A.B., assistant, in the department of pathology.

**AMERICAN PUBLIC HEALTH ASSOCIATION.**—The American Public Health Association will hold its convention in 1920 at San Francisco. The officers of the Association for the coming year are Dr. W. S. Rankin, Raleigh, N.C., President; John Armyot, Ottawa, William H. Robin, New Orleans, G. H. Sumner, Des Moines, Vice-Presidents; W. H. Hedrie, Boston, Secretary; and Lee K. Frankel, Treasurer.

**INFANT HYGIENE IN URUGUAY.**—At the second South American congress of infant hygiene held at Montevideo, the conclusions of which have been published by the Minister of Public Instruction of the Republic of Uruguay, it was recommended that governments institute a campaign of prophylaxis and assistance for tuberculous children, removing to special schools all suspected cases; that instruction on the prevention of tuberculosis, syphilis, alcoholism, hydatid cysts, and paludism be given in all schools; that the principles of child-rearing also be taught in schools; that the strictest uniformity in the collection of statistics be enforced and that for infants a special death certificate be required in which the fact of illegiti-

macy and the dietary should be stated; that special precautions should be taken in the early conceptive period and continued till the completion of convalescence; that prizes and grants for nursing women in institutions of infant protection should be founded, and that midwives should be supplied to rural districts at the public expense; that prenatal prophylaxis of purulent ophthalmia and precautions against the introduction of trachoma by immigrants be insisted upon; and that dental dispensaries be attached to all schools.

**APPOINTMENTS AT THE UNIVERSITY OF LYONS.**—Dr. Mouriquand has been appointed professor of general pathology and therapeutics at the University, to succeed Professor Lesieur, deceased, and Dr. Policard has been appointed professor of general anatomy and histology in place of Professor Renaut, who has retired.

**MR. FRICK'S BEQUESTS TO MEDICAL INSTITUTIONS.**—The following medical institutions are to receive approximately five hundred thousand dollars each by the will of the late Mr. Henry C. Frick: Pittsburgh Free Dispensary, Pittsburgh; Western Pennsylvania Hospital, Pittsburgh; Uniontown Hospital, in Fayette County, Pennsylvania; Cottage State Hospital in Connellsville, Pa.; Westmoreland Hospital, in Greensburg, Pa.; Mount Pleasant Memorial Hospital, Westmoreland County, Pa.; Braddock General Hospital, Allegheny County, Pa.; Homestead Hospital, of Homestead, Pa.; Children's Hospital, Pittsburgh; and the Allegheny General Hospital, Pittsburgh.

**APPOINTMENT OF DR. R. M. PEARCE.**—Dr. Richard M. Pearce, professor of research medicine in the University of Pennsylvania, has been appointed director of the division of medical education of the Rockefeller Foundation. He has sailed for Europe in the interest of the Foundation.

**INCREASE OF TUBERCULOSIS DURING THE WAR.**—At a meeting of the Congress on Tuberculosis Prevention in London, the Hon. Christopher Addison, Minister of Health, is reported to have stated that a great number of men have been added to the sufferers from tuberculosis because of the war. He suggested improved housing conditions as one of the most important of preventive measures.

#### BOSTON AND MASSACHUSETTS.

**WEEK'S DEATH RATE IN BOSTON.**—During the week ending December 13, 1919, the number of deaths reported was 220 against 295 last year, with a rate of 14.41 against 19.61 last year. There were 31 deaths under one year of age against 34 last year.

The number of cases of principal reportable diseases were: Diphtheria, 48; scarlet fever, 97; measles, 183; whooping cough, 62; typhoid fever, 1; tuberculosis, 37.

Included in the above were the following cases of non-residents: Diphtheria, 10; scarlet fever, 20; typhoid fever, 1; tuberculosis, 5.

Total deaths from these diseases were: Diphtheria, 4; scarlet fever, 1; measles, 4; whooping cough, 2; typhoid fever, 1; tuberculosis, 22.

Included in the above were the following non-residents: Diphtheria, 1; typhoid fever, 1; tuberculosis, 1.

**BOSTON MEDICAL LIBRARY AND THE SUFFOLK DISTRICT MEDICAL SOCIETY.**—At a meeting of the Boston Medical Library held in conjunction with the Suffolk District Medical Society on December 17, the following addresses were given: "The Relative Value of Some Modern Methods of Diagnosis and Treatment of Chronic Peptic Ulcer," by Dr. Franklin W. White, and "The Diagnosis and Treatment of Diseases of the Colon," by Dr. Henry F. Hewes.

#### CAMBRIDGE ANTI-TUBERCULOSIS ASSOCIATION.

—At the annual meeting of the Cambridge Anti-Tuberculosis Association, Dr. Eugene R. Kelley, Health Commissioner of Massachusetts, delivered an address on "The Present Tuberculosis Drive." The following officers were elected for the coming year: Eugene A. Darling, M.D., president; Mrs. Rufus P. Williams and Edward A. Andrews, vice-presidents; Miss Louise W. Jackson, secretary; E. Willard Phippen, treasurer, and the following board of managers: James T. Addison, John J. Ahern, Miss Mary L. Birtwell, Walter S. Burke, Mrs. Raymond Calkins, Rev. P. H. Callahan, Bronson Crothers, M.D.; Mrs. Davis R. Dewey, George L. Dow, Arthur Drinkwater, Alfred Fiderkiewicz, M.D.; M. E. Fitzgerald, Thomas Hadley, Mrs. Franklin T. Hammond, Charles

M. Hutchinson, M.D.; Harry W. Joel, Mrs. Herbert S. Langfeld, Elie H. LaPierre, Felix McGirr, M.D.; Rev. Edson Reifsnider, J. Arnold Rockwell, M.D.; Mrs. Charles R. Sanger, John J. Smith, M.D.; William D. Swan, M.D.; Mrs. Joseph G. Thorp, C. F. Turner, Mrs. Charles P. Vosburgh, George C. Whipple, and Miss Sarah Yerxa.

**BOSTON FLOATING HOSPITAL.**—The Boston Floating Hospital has opened recently at 40 Wigglesworth street a department which will take care of babies on shore during the winter and conduct special research work. Three houses of three stories each have been renovated at the cost of about \$45,000. It has been announced that special attention will be given to perfecting medicines which will later be given to the children on the regular floating hospital. A special laboratory has been constructed for the use of Mr. Bosworth, a Boston chemist, who believes that the elements in cow's milk which are not needed by children but are necessary for calves are the causes for more than fifty per cent. of infant trouble encountered in bottle-fed babies. Mr. Bosworth has devised a system whereby these elements, calcium and phosphorus can be eliminated from the milk. The manager of the hospital is G. Loring Briggs, the superintendent, Miss Sarah A. Egan, and the supervising nurse, Miss Margaret J. Bruce.

**APPOINTMENT OF DR. GOODPASTURE.**—Dr. Ernest William Goodpasture has been appointed assistant professor of pathology at the Harvard Medical School.

**SMALLPOX IN MASSACHUSETTS.**—The following statement relating to smallpox in Massachusetts has been issued by Dr. Stanley H. Osborn, epidemiologist of the State Department of Health. It emphasizes the value of vaccination, and points out that thus far this year there have been thirty-seven cases of smallpox in Massachusetts; of that number, only one had been vaccinated, seven years previous to his infection.

"The placing of the border quarantine against smallpox on the Province of Ontario, Can., November 26, by the United States Public Health Service because of a smallpox outbreak, brings forth again the ease with which smallpox increases wherever vaccination is not carried out, and the danger of an epidemic is always present in such communities.

"There have been 37 cases of smallpox in Massachusetts up to the present time this year, most of the cases receiving their infection from without the State and, in certain instances, those cases infected unvaccinated persons. Thus the possibility of an outbreak is constantly present in communities, particularly where the unvaccinated individuals form the major portion of the population. Fortunately this does not exist, to any great extent, in Massachusetts, and the Commonwealth has been comparatively free from smallpox.

"Many of the recent smallpox cases received their infection in Canada, and because of the hundreds of cases in the province of Ontario, the United States Public Health Service established the border quarantine.

"In Massachusetts for the period 1915-1918 there were 136 cases of smallpox, 19 of whom died. Of this number 17 had never been vaccinated.

"Up to November 28, 1919, there have been 37 cases of smallpox in Massachusetts during the year, but one case being in a vaccinated individual and the vaccination was done over seven years ago. Thus the value of vaccination, as a prevention against the disease, is again shown. The mildness of the disease in vaccinated individuals, with practically no marring of the features, makes it the ideal preventive and is used by those individuals and physicians who are acquainted with the malignant and disfiguring type of the disease, such as occurred in the State in 1915 and 1917.

"The vaccine most widely used to prevent smallpox in Massachusetts is that prepared and furnished in capillary glass tubes by the biological laboratories of the State Department of Health."

#### NEW ENGLAND NOTES.

##### NEW ENGLAND OPHTHALMOLOGICAL SOCIETY.

—At a meeting of the New England Ophthalmological Society held in Boston on December 16, the following papers were read: Report on Cases of Retrobulbar Neuritis, by Dr. Allen Greenwood, and "Demonstration of the Beach Scoop Perimeter," by Dr. S. J. Beach.

---

#### The Massachusetts Medical Society.

##### NEWS FROM THE DISTRICT SOCIETIES.

Dr. HOWARD A. STREETER, Director Division on Venereal Diseases, State Department of Health, has accepted the invitation of the Committee on Public Health, Massachusetts Medical Society to serve on its list of speakers on public health subjects for District Societies. Dr.



Streeter will talk on laboratory errors and can furnish an illustrated lecture with film of 30 minutes' duration; subject, "Health and Disease," showing the progress of syphilis and gonorrhea. This is a scientific lecture throughout. Dr. Streeter's services may be secured for District meetings by addressing the Secretary of the Committee, Dr. Annie Lee Hamilton, 141 Newbury Street, Boston.

### Obituary.

#### JOHN HENRY GIFFORD, M.D.

DR. GIFFORD, who had been ill with heart disease since early last summer, died at his home in Fall River December 14, 1919, at the age of sixty-one. He had been a Fellow of the Massachusetts Medical Society since 1886, and previous to 1915 had been a member of its Council and a nominating councillor for the Bristol South District Medical Society.

John Henry Gifford was born in West Falmouth February 6, 1858, the son of Azariah S. and Lois (Bean) Gifford. After preparatory schooling in his native place, he attended Haverford College, an institution supported by the Society of Friends in Haverford, Pa., whence he was graduated in 1879, being the valedictorian of his class, and from which he received the degree of A.B. He then attended Harvard Medical School in Cambridge, graduating in 1884 and acquiring the degree of M.D.

September 14, 1886, he was married to Miss Phebe E. Newton of Fall River, who, with one child, Newton R. Gifford, 216 Prospect street, survives him.

Dr. Gifford entered on medical practice in 1884, and continued therein, in Fall River, until forced by illness, a few months ago, to withdraw from all activity.

He was always most friendly to public causes, particularly those of charity and education, and in such connections as he appeared with papers or addresses manifested excellent public spirit and a sense of the value of true professionalism. He was always ready to assist poor and unfortunate men and women, and at the first attempt to establish hospital service in the city was among those most serviceable. When the Emergency Hospital was established, Dr. Gifford became its first president, and later served with efficiency and attentiveness as an official of the Union

Hospital. He was once president of the Fall River Medical Society. He was for some years associate medical examiner of the Third Bristol district, and was long a physician of the Highland Hospital, a member of the American Medical Association and the Massachusetts Medical Society.

His political relation was with the Republican party and his religious connection was with the First Congregational Church.

### Correspondence.

#### TO THE MEMBERS OF THE MEDICAL PROFESSION.

Lynn, Dec. 26, 1919.

##### Dear Fellow-members:—

On Christmas Eve, while taking his car from his garage, Dr. Hamlin P. Bennett of Lynn was set upon and beaten to unconsciousness, and now is in a precarious condition in the hospital, the gangsters escaping in a stolen car.

Such an attack may be made upon any of us, equally without provocation, and for our own protection as well as an expression of interest in Dr. Bennett, it is proposed to raise, by subscription, a fund to be offered as a reward for the detection and conviction of Dr. Bennett's assailants.

In order to be most effective it is important that this be done promptly, and subscriptions have already been offered in sums varying from five dollars to one hundred dollars.

The force of this movement obviously depends upon the size of the fund, and only a prompt and liberal subscription will insure results.

Please send your subscription at once to Dr. John W. Trask, 171 Lewis Street, Lynn, Mass.

WILLIAM T. HOPKINS,  
President, Essex South District  
Massachusetts Medical Society,  
JOHN W. TRASK,  
President, Lynn Medical Fraternity.

### Miscellany.

#### SOCIETY NOTICE.

ESSEX NORTH DISTRICT MEDICAL SOCIETY.—The semi-annual meeting of the Essex North District Medical Society will be held Wednesday, Jan. 7, 1920, at noon, sharp, at Unity Hall, Main Street, opposite City Hall Park, Haverhill, Mass.

Dinner will be served at 12 M. and followed by the business meeting. The following papers will be presented:

The Physician's Responsibility in Dental Disease by George H. Wright, D.M.D., of Boston, Lecturer on Dental Hygiene, Harvard Dental School (40 minutes).

Some Thoughts on Influenza, by Timothy Leary, M.D., of Boston, Professor of Pathology, Tufts Medical School (40 minutes).

The Need of Pre-Medical Education as a Requisite to the Acceptance of a Degree by Boards of Registration in Medicine, by W. P. Bowers, M.D., of Boston, Secretary to the Board of Registration in Medicine (20 minutes).

The annual assessment may be paid at this meeting.

J. J. O'SULLIVAN, M.D., President,  
J. FORREST BURNHAM, M.D., Secretary.